

## PP-177

**The Relation between Cardiac T2 Value and the Presence of Fragmented QRS in Patients with  $\beta$ -thalassemia Major, who Received Iron Chelation Therapy**

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**Objectives:** T2 \* values, measured by cardiac MRI are recommended for the identification of patients at high risk for development of heart failure and arrhythmia in beta thalassemia major (TM) patients. Conditions that lead to non-homogeneous activation like myocardial fibrosis, lead to the development of fragmented QRS (fQRS) on ECG. Purpose of this study, to evaluate the effect of iron-chelation treatments on cardiac T2 \* values and the presence of fQRS in the surface ECG.

**Methods:** In this study, patients between the ages of 15-40 with a diagnosis of thalassemia major were enrolled. All patients were receiving the same iron chelator (deferrioxamine, deferipirone, deferasirox or deferrioxamine + deferipirone combination) at least two years. In these patients, cardiac MRI T2 \* values and ECGs, were evaluated annually. Cardiac T2 \* value of less than 20, was considered as cardiac iron overload. fQRS were investigated on 12-lead surface ECGs of patients'. The relation between iron chelators and cardiac T2 value and the presence of fragmented QRS was investigated.

**Results:** This study included a total of 103 patients (46 males, 57 females) follow up with diagnosis of beta thalassemia major in our center. For patients with coronary artery disease, had no risk factors other than smoking. All of the patients were receiving regular blood transfusions and iron chelator. Deferrioxamine in 43 patients, 37 patients were receiving deferipirone and deferrioxamine in 45 patients. Twenty-two patients taking combined deferrioxamine and deferipirone. According to use of deferrioxamine, deferipirone, deferasirox, the combination of deferipirone and deferrioxamine, low T2 \* ratio of 55.8%, 51.4%, 28.9% and 59.1%, respectively. According to use of deferrioxamine, deferipirone, deferasirox, the combination of deferipirone and deferrioxamine, the presence of fQRS on surface ECG, 69.8%, 59.5%, 26.7% and 63.6%, respectively. Deferrioxamine users, compared with non-users, to be statistically significant, the presence of fQRS on ECG was more rare, low T2 \* values were encountered less ( $p<0.05$ ).

**Conclusion:** In TM patients, to determine cardiac iron overload and evaluate the effectiveness of iron chelators, T2 \* value of cardiac monitoring is recommended. However, especially in patients with cardiac MRI that cannot be performed, fQRS on surface ECG can help in predicting the presence of cardiac iron burden. According to our study, deferasirox is superior to other agents with lower cardiac T2 \* and rarely of fQRS presence.

## PP-178

**Fragmented QRS Predicts the Arrhythmic Events in Patients with Heart Failure Undergoing ICD Implantation for Primary Prophylaxis: More Fragments More Appropriate ICD Shots**

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**Background:** Fragmented QRS complex (fQRS) is associated with cardiovascular outcomes in various patient populations. Although there were clinical studies investigating the association of fQRS with arrhythmic events in patients with left ventricular systolic heart failure, the results were conflicting regarding the association of implantable cardioverter defibrillator (ICD) shocks and fQRS. In this study, we aimed to evaluate the association between the presence and extent of fQRS at standard electrocardiography with appropriate ICD shocks.

**Methods:** A total of 215 patients (age:  $58.2 \pm 11.6$  years, 72.5% male) with the diagnosis of left ventricular systolic heart failure in whom ICD had been implanted for primary prophylaxis were enrolled. Standard ECG evaluation revealed fQRS complex in 123 patients (57.2%). The phenomenon of fQRS was defined as deflections at the beginning of the QRS complex, on top of the R-wave, or in the nadir of the S-wave similar to the definition in CAD.

**Results:** At mean  $23.5 \pm 12.1$  months follow-up, 111 (51.6%) patients experienced appropriate ICD shocks. Median number of ECG leads with fQRS were higher in patients with appropriate ICD shocks [3 (2-6) vs 1 (0-2),  $p<0.001$ , respectively]. The presence of fQRS (OR: 6.64, 95% CI: 3.54-12.4,  $p<0.001$ ) and the number of leads with fQRS (OR: 1.35, 95% CI: 1.22-1.67) were found as independent predictors of appropriate ICD shocks. Additionally, there was a negative correlation between left ventricular ejection fraction and the number of leads with fQRS ( $r=-0.434$ ,  $p<0.001$ ).

**Conclusion:** In conclusion, presence and extent of fQRS complex on standard 12-lead ECG predicts appropriate ICD shocks in patients with left ventricular systolic heart failure who underwent ICD implantation for primary prophylaxis. So, large scale and prospective studies are needed to confirm those findings.

## PP-179

**The Importance of Fragmented QRS in Systemic Sclerosis Patient's Early Diagnosis of Cardiac Involvement**

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**Objective:** Systemic sclerosis (SSc) is autoimmune connective tissue disease that characterized with fibrosis and diffuse vascular lesions. Even though cardiac involvement is rarely in clinical, myocardial fibrosis is to be expressed in proportion of %50-80. When clinical symptomatic cardiac dysfunction emerge, prognosis of the disease is bad. For this reason early diagnosis of cardiac dysfunction in SSc patients is important. The aim of this study is seek the sequence of fragmented QRS (fQRS) that recommended utilization of myocardial fibrosis in SSc patients and relation with pulmonary artery pressure.

**Methods:** Thirty one SSc patient (23 woman,  $40.4 \pm 9.2$  year) that asymptomatic as cardiac and 41 healthy volunteer (31 woman,  $38.2 \pm 11.8$  year) was recruited to study. 12 derivation surface ECG and transthoracic echocardiography of patients was performed. Approximately systolic pulmonary artery pressure (sPAB) was detected by using TY jet in echocardiography. Presence of fragmented QRS was investigated in surface ECG.

**Results:** Standard echocardiographic parameters and presence of fQRS in surface ECG was compared in every two groups. Value of sPAB was to be determined high in SSc group according to control group ( $28.8 \pm 11.9$  mmHg vs  $21.3 \pm 5.0$  mmHg,  $p=0.001$ ). Presence of fQRS presented further in SSc group than control group (%54.8 vs %9.8,  $p=0.001$ ). Significant difference was found about sPAB value between groups that fQRS is positive and negative ( $34.2 \pm 13.4$  mmHg vs  $22.2 \pm 4.4$  mmHg,  $p=0.001$ ). Also in SSc patients whose value of sPAB was more than 25 mmHg, frequency of fQRS was detected more.

**Conclusion:** Studying fQRS in surface ECG is cheap and simple procedure that showing cardiac dysfunction before manifestation of clinical findings. Also outstanding cause of mortality in SSc patients is pulmonary hypertension, relation between fQRS and sPAB must be considered.

## PP-180

**The Comparison of Heart Rate Variability Parameters between Type 2b Vasovagal Syncope and Other Types of Vasovagal Syncope**

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**Background:** Measurement of Heart Rate Variability (HRV) is a noninvasive approach based on ECG monitoring that allows an indirect evaluation of cardiovascular autonomic control. In this study, we aimed to compare HRV parameters between type 2B and other types of vasovagal syncope (VVS) to find parameters for predicting prolonged asystole risk before Tilt testing.

**Methods:** By examining past records, we scanned patients between 1 January 2009 - 1 December 2012 who applied our hospital with complaining syncope. We included one hundred patients with a diagnosis of VVS who examined by echocardiography and Holter ECG before Tilt table testing. Patient with type 2B VVS was called group 1 (n:43), VVS other than type 2B (type 1, type 2A, type 3 and POTS) were called group 2 (n:57).

**Results:** In group 1 patients, starting asystole time was observed at  $16.2 \pm 10.4$  minute from beginning the test and duration asystole period was found  $5.2 \pm 1.2$  seconds during the test.

Between two groups, HRV parameters (SDNN, SDANN, SDNN indeks) were significantly longer in group 1 patients than group 2 patients ( $p:0.019$ ,  $p:0.036$ ,  $p:0.008$ ; respectively).

The highest heart rate value which obtained by Holter ECG records were significantly lower in group 1 patients than group 2 patients ( $p:0.011$ ).

**Conclusion:** Patients diagnosed with type 2B VVS were found prolonged HRV parameters. It considered these type of patients are more sensitive to the effects of autonomic nervous system than other types of VVS. The highest heart rate value in type 2B VVS was lower than the other group. It suggested that sinus node parasympathetic dominance inhibits reaching maximum heart rate values in those patients than other types of VVS patients. Our study is important to show predicting risk of asystole before Tilt testing by examining HRV parameters and the maximum heart rate value

## PP-181

**Impact of Contionous Positive Airway Pressure Treatment on Atrial Electromechanical Delay and P Wave Dispersion with Obstructive Sleep Apnea**

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**Objectives:** Obstructive sleep apnea (OSA) is a common medical condition that is affecting approximately 5% to 15% of the population. Atrial fibrillation (AF) is the most common arrhythmia encountered in clinical practice. OSA has been shown to be associated with AF. Electrophysiological and electromechanical abnormalities